Since little has been written concerning the characters of the individual bones of the Passenger Pigeon, it may prove of value to later workers to record here the distinguishing features of the particular elements present in the La Brea collection.

The specimens of Ectopistes used for comparison were generously loaned by Dr. Wetmore from the collections in the U.S.National Museum.. They consist of 3 tarsometatarsi, 3 carpometacarpi, 1 coracoid, 1 ulna, and 6 humeri from archeological and historical deposits in Ohio. The specimens have all been carefully checked to Ectopistes and identified by Dr. Wetmore.

Tarsometatarsus: LA.Mu. no. G4974 pit locality unknown: Resembling Ectopistes and distinguished from Columba as follows: (1) Relatively more slender (ratio of breadth of shaft to length, 2.6 %, average for Ectopistes; 3% for Columba); (2) Proximal end anterior face internal edge of shaft adjacent to muscle scar flat or slightly convex but not elevated into a decided ridge as in *Columba* ; (3) proximal ligamental attachment a well developed definite area while in Columba it is less developed and indefinitely marked; (4) facet for M i placed lower on shaft than in Columba (ratio of distance to top of facet from distal end relative to length varying from 38 to 42 % in Ectopistec, and from 47 to 49 % in Columba); (5) external condyle smaller (height of condyle to length is 49 to 52% in Ectopistes anf from 55 to 61% in Columba).

8 ~~[illegible] been written [illegible]~~
~~The skeleton of Ectop. [illegible]~~

Characters which identify the La Brea bones with Ectopistes are listed below, with chars. of Columba ~~Ecto.~~ given by way of contrast. ~~Photographs of the three well preserved elements are presented for comparison.~~

Coracoid: L. A. Mus. no. from Pit

① Length 31.1 mm., ~~length of Melopelia asiatica 26.00 mm.~~, Columba fasciata 35 to 39 mm.; Ectopistes migratorius 31.9 mm.

② Scapular facet slightly concave & well ~~marked~~ formed as in Ectopistes; ~~both species~~ Columba with facet flattened & indistinctly demarcated.

③ Attachment of coraco-brachialis muscle, a rounded knob as in E. mig.; this area in Columba flattened & indefinite.

④ Region of coraco-humeral surface of ~~[illegible]~~ head squared & somewhat angular; inflated & rounded in Columba.

Carpometacarpus: L. A. Mus. nos. H 2005 & H 2006 pit unknown, and no. E495: from dump of pits 61 & 67.

① Length 29.7 to 30.3 mm.; Ectopistes 28.3 to 30.4, Columba fasciata 32.3 – 34.8 mm.

② Deep pit-like depression on inner side at base of Metacarpal I near internal ligamentary tuberosity, as in Ectopistes; the pit is absent in Columba.

~~3~~ Tarsometatarsus: L. A. Mus. no. from Pit

① Length similar to both Ectopistes migratorius & Columba fasciata (greater than C. flavirostris), 28.5 mm., but bone much more slender than Columba (~~average~~ aver. ratios of breadth of prox & dist. ends & shaft to length of bone ~~for~~ in Ecto. 22.8%, 22.5% & 9.7% resp. & ~~for~~ in Columba 24.5, 24.6 & 12.8 for the same ratios, the La Brea specimen resembling Ecto.)

② Inner edge of shaft adjacent to tubercle for tib. ant. flat or slightly convex in the fossil & Ecto., & elevated to a decided ridge in Columba.

③ Prox. lig. attachment well-dev. & definitely marked; in Columba less developed & indef. marked.

④ Distance of facet for metatarsal 1 from dist. end ~~rel. to length of bone~~ ~~[illegible]~~ less in Ecto. & fossil than in Columba (aver. ratio 40.3 % rel. to length in Ecto.) 48.2 % in Columba

⑤ ~~Ht~~ of external cond. rel. to br. of dist. end 50.9% aver. in Ecto. & 58.3 in Columba with the fossil resembling ? Ecto.

50.9

Ulna. La. mus. no. 68833 from Pit

An incomplete specimen identified as Ecto on the basis of size. Br. & depth of distal end 5.3 mm. br. of sh. 3.0.

Same meas. in Columba 6.3, 6.2 & 3.4 resp.

Pigeons

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Tarsus	a Length	b Br. prox	c Br. dist	d Br. sh.	ba	ca	da	x wt M.1	xa	y ht ext. cond.	yc
64974	28.5	6.4	6.3	2.8	22.4	22.0	9.8	11.0	38.6	3.2	50.7%
320004 ①	28.2	6.4	6.5	2.7	22.6	23.0	9.4	11.7	41.5	3.4	52.3
" ②	27.3	~~6.3~~	—	2.5	23.0	—	9.1	11.2	41.0		
" ③	27.1		6.0	2.7	68 0	~~22.1~~	~~9.9~~	10.5	~~38.5~~	2.9	~~49.4~~
				10.7		67 1	38.2		121.0		101.7
Col. 773	28.6	7.1	6.9	3.4	24.8	24.0	11.9	13.8	48.3	4.2	61.0
10.12	26.1	6.6	6.5	3.2	25.2	25.2	12.7	12.7	48.7	3.8	58.5
10017	27.3	6.6	6.5	3.3	~~24.2~~	~~24.2~~	~~12.0~~	~~13.0~~	~~47.6~~	~~3.6~~	55.5
		3)20 3(6.7		9.9	74 2	74.5	36.1	3)39.9(13	144.6		3)175.0
galapagos 750	25.4	4.3	4.9	2.0	16.9	19.2	7.9	9.3			58.3
Zenaidura 279	20.6	4.3	4.4	2.2	20.8	21.3	10.6	7.6			

Passenger	vs. 24.5	Band-tailed
Relatively more slender		broader
Int. edge not raised		Internal edge (prox-ant. face) raised-forming sort of prox arch with ext. edge
Prox. ligamental attachment, well developed ~~forming a~~ conspicuous ~~triangular, slightly concaved surface~~	→	less well-developed & less conspicuous.
Facet for M1 lower on shaft		facet for M1 higher on shaft
Ext. condyle smaller		Ext. condyle larger

Pigeons cont'd

Humerus	a	b	c	d	e				
Col.	length	br prox	br dist	br sh.	extent of deltoid backward	ba	ca	da	eb
1012	47.5	14.3	11.1	5.4	9.4	30.1	23.4	11.3	65.6
F1595	47.5					30.1			
Ectopistes	41.6	12.8	9.7	4.6	—	30.8	23.3	11.1	~~[illegible]~~
	41.1	12.2	9.1	4.4	8.2	29.7	22.1	10.7	67.2
	41.2	12.5	9.7	4.8	8.1	30.4	23.6	11.6	64.7
	42.8	13.2	9.8	4.7	—	30.8	22.8	10.9	—
	41.8	13.1	10.1	4.8	8.4	31.3		11.4	64.1

Passenger vs Band-tailed

Muscle line on deltoid crest ~~takes~~ off connects with the edge above connection with shaft

Muscle line connects with edge before or at junction of crest with shaft.

Ulna length	br facets prox	ht prox	br distal	depth distal	br sh
Ecto. 45.8	6.1	6.4	5.3	5.3	3.1
			5.3	5.3	3.0
Col. 53.5	7.0	7.3	6.3	6.2	3.4

Pigeons - cont'd

Coracoid length a	b Prox Gr.	c head Gr.	upper scar depth d	upper scar length e	ba	ca	de	dc
E4960	31.1	3.9	5.8	4.0	5.5	12.5	18.6	71.5	69.0
320085	31.9	3.9	5.6	3.9	5.5	12.2	17.5	73.1	69.6
col. 1007	35.5	4.3	6.3	4.4	6.2	12.1	17.7	75.2	69.8
1012	35.3	4.6	6.6	4.7	6.0	13.0	18.6	78.4	71.3
773	39.1	5.0	6.9	5.2	6.6	12.7	17.6	78.8	75.5

Passenger v. Band-tailed

Scapular facet slightly concave & well-formed

Scap. facet flatter & less distinctly demarcated.

attachment of coraco-brachialis a rounded knob

attach. of cor.-brach. a flattened indefinite area

Carpus length a	length head b	ba	c br. meta	cb
320086 ①	29.0	8.8	30.3	4.1	46.1
②	28.3	8.3	29.3	3.9	47.0
③	30.4	9.1	29.8	4.0	44.0
col. 1007	33.5	9.6	28.6	4.3	44.7
1012	32.3	9.6	29.7	4.3	44.7
773	34.8	10.5	30.2	4.5	42.8

Sub rea ecto.

30.3	9.0	29.7%
24.9	c	
29.7	9.2	31.0%

Sub rea col.

	-	
32.3	9.4	29.1%

Passenger v Band-tailed

Deep, pit-like excavation on inner side of Mc, near at base int. lig. tuberosity

Pit absent